

CLAIMS

[1] A cleaning device, comprising:

a cleaning unit which is provided with an open portion
5 disposed opposite an outer circumferential portion of an image bearing member and is disposed downstream of a position for transferring to a paper a toner image which is formed on the image bearing member;

10 a cleaning blade which is provided in the interior of the cleaning unit and wherein an apical portion abuts the outer circumferential portion of the image bearing member, for scraping off residual toner attached to the image bearing member; and

15 a toner catching sheet disposed upstream in a rotating direction of the image bearing member from the open portion of the main body of the cleaning unit body,

said toner catching sheet being provided in the interior of the cleaning unit and parallel in a lengthwise direction to an axial direction of the image bearing member,

wherein in the toner catching sheet, a first end portion
20 in a direction perpendicular to the lengthwise direction is affixed to the cleaning unit, a second end portion opposed to the first end portion abuts the outer circumferential portion of the image bearing member, and the free length from an affixed position of the first end portion until the position at which
25 the second end portion abuts the outer circumferential portion of the image bearing member is determined by an amount of paper dust buildup on the outer circumferential portion of the image bearing member in the lengthwise direction.

- [2] The cleaning device according to claim 1, wherein in the toner catching sheet, a first free length corresponding to a location at which there is a large amount of paper dust buildup on the outer circumferential portion of the image bearing member
5 is longer than a second free length corresponding to a location at which there is a small amount of paper dust buildup on the outer circumferential portion of the image bearing member.
- [3] The cleaning device according to claim 2, further comprising a sheet attaching member for affixing the toner
10 catching sheet to the cleaning unit in the interior of the cleaning unit,

wherein the affixed position of the first end portion of the toner catching sheet with respect to the sheet attaching member includes a first affixed position which corresponds to
15 the first free length and a second affixed position which corresponds to the second free length, the first affixed position being set to a position separated further from the outer circumferential portion of the image bearing member than the second affixed position, such that the first free length is longer
20 than the second free length.

[4] The cleaning device according to claim 1, wherein the location at which there is a large amount of paper dust buildup on the outer circumferential portion of the image bearing member corresponds to a region in which is disposed a separating member
25 for transporting the paper to the image bearing member one sheet at a time in the axial direction of the image bearing member.

[5] The cleaning device according to claim 1, wherein the toner catching sheet is a resin film and is charged with the opposite

polarity of charge characteristics of toner.

[6] A cleaning device, comprising:

a cleaning unit which is provided with an open portion disposed opposite an outer circumferential portion of an image bearing member and is disposed downstream of a position for transferring to a paper a toner image which is formed on the image bearing member;

10 a cleaning blade which is provided in the interior of the cleaning unit and wherein an apical portion abuts the outer circumferential portion of the image bearing member, for scraping off residual toner attached to the image bearing member;

15 a toner catching sheet disposed upstream in a rotating direction of the image bearing member from the open portion of the cleaning unit body, said toner catching sheet being provided in the interior of the cleaning unit and parallel in a lengthwise direction to an axial direction of the image bearing member; and

20 a paper peeling claw provided upstream on the main body of the cleaning unit body and abuttable to the image bearing member for peeling from the image bearing member the paper onto which has been transferred the toner image when abutting the image bearing member,

25 said paper peeling claw being provided with a paper peeling portion for peeling the paper from the image bearing member and a vibrating portion for causing the toner catching sheet to vibrate by touching the toner catching sheet when the paper peeling portion abuts or separates from the image bearing member.

[7] The cleaning device according to claim 6, wherein the paper

peeling claw is provided with the paper peeling portion and the vibrating portion with respect to a single rotating center.

[8] The cleaning device according to claim 7, wherein the paper peeling claw positions the toner catching sheet on the side of the cleaning unit through the vibrating portion touching the toner catching sheet when the paper peeling portion abuts the image bearing member, and positions the toner catching sheet on the side of the image bearing member through the vibrating portion separating from the toner catching sheet when the paper peeling portion separates from the image bearing member.

[9] The cleaning device according to claim 8, wherein the paper peeling portion and the vibrating portion are positioned sandwiching the rotating center on either side thereof.

[10] The cleaning device according to claim 6, wherein the paper peeling claw is disposed corresponding to a region in which the separating member is disposed for transporting the paper one sheet at a time to the image bearing member in the axial direction of the image bearing member.

[11] The cleaning device according to claim 6, wherein the paper peeling claw has frictional charge characteristics of the same polarity as the charge characteristics of the residual toner.